Europe, because it is on the existence or non-existence of anticyclonic areas over Russia that bad weather may either steer clear of our coasts, or pass clean over us and cause enormous damage to life and property.

Dr. Köppen's adaptation of composite portraiture for anticyclones will, when fully developed, doubtless lead to the discovery of principles which must be of considerable practical importance in our every-day life, and meteorologists should direct their attention to the discovery of some law which will indicate the approach of a change in the distribution of high barometer readings. At present we know absolutely nothing of what is taking place over the Atlantic out of sight of our own coasts, and the ordinary weather-charts cover such a small extent of North-Western Europe that they do not give us a fair idea of what the conditions are to the eastward. As the facts indicated become more fully known, we shall probably see an extension of the Weather Report area, and a corresponding improvement in forecasting.

The "Vierteljahrs-Wetter-Rundschau" appeared originally in various numbers of the *Annalen der Hydrographie und Maritimen Meteorologie*, the official publication of the Deutsche Seewarte, and are now reprinted in separate form.

NOTES.

THE members of the "Provisional Committee" appointed at the International Geological Congress in London, with reference to preparations for the next meeting of the Congress at Philadelphia, met at New Haven on Thursday, November 15. All were present except Dr. T. Sterry Hunt, who was confined to New York by illness. By vote, twenty-four members of the Permanent or Organizing Committee were appointed, as follows:—C. A. Ashburner, J. C. Branner, T. C. Chamberlin, G. H. Cook, J. D. Dana, W. M. Davis, C. E. Dutton, G. K. Gilbert, James Hall, A. Heilprin, C. H. Hitchcock, Joseph LeConte, Dr. J. Leidy, J. P. Lesley, O. C. Marsh, J. S. Newberry, J. W. Powell, J. R. Procter, N. S. Shaler, J. J. Stevenson, C. D. Walcott, R. P. Whitfield, H. S. Williams, Alexander Winchell. The Committee has power to add to its number. Dr. J. S. Newberry was appointed temporary Chairman. With this action, the duties of the Provisional Committee ended. The first meeting of the Permanent Committee will be held in Washington in the month of April. One of the publications presented to the recent session of the Congress in London was a voluminous Report on some important questions in American stratigraphical geology. We learn from an article in the December number of the *American Journal of Science*, by Prof. Dana, that, in his opinion, the views of the great majority of American geologists are not fairly represented in that Report. The Committee now appointed will certainly be regarded by geologists in Europe as a thoroughly representative one, which will, no doubt, take good care that the general body of geological opinion in the United States shall be adequately put before the world at the Philadelphia meeting.

ON Tuesday the completion of the ninth edition of the "Encyclopædia Britannica" was celebrated by a dinner given by Dr. W. Robertson Smith, the editor, in the hall of Christ's College, Cambridge. Upwards of a hundred contributors were present, and among them were many eminent men of science. Responding for "Science," Dr. Archibald Geikie said the old limits within which culture was confined had proved to be altogether too small for the progress of the present day. The soldiers of the republic of science had sometimes been accused of a strong desire to attack University culture and carry it by storm. For his part he wished that it might stand, but that no barrier should be interposed against the freest communion between the people inside and the newer and wider city around their borders.

AN Anthropological Congress is to be held at Vienna during August next.

AN important paper by Prof. Virchow, on "Land and People in Ancient and Modern Egypt," appears in the current number of the Transactions of the Berlin Gesellschaft für Erdkunde. It embodies some of the results of Prof. Virchow's ethnological researches during his recent visit to Egypt. It has hitherto been thought that the fellaheen of to-day are of exactly the same physical type as that of the most ancient known Egyptian population. Prof. Virchow, however, holds that the evidence afforded by the oldest sculpture, as well as by the skulls of the earliest period, tends to show that the primitive type in Egypt was brachycephalic, whereas the types which exist at the present time, and have existed for ages, are dolichocephalic and mesocephalic. Whether the change was produced by the influence of environment, or by the influx of new races, cannot, according to Prof. Virchow, be definitely determined by the evidence at present at our disposal; but, of the two views, the latter, he thinks, is the more probable.

THE inaugural lecture delivered before the University of Glasgow by Prof. Max Müller, as Lord Gifford's Lecturer in Natural Theology, has just been published by Messrs. Longmans, Green, and Co. In this lecture, Prof. Müller presents a most interesting account of the ideas which have regulated the work of his life. His conception of "the science of religion" will serve as the test, and, he hopes, the confirmation, of his theories relating to language, mythology, and thought.

THE New England Meteorological Society proposes to have a Loan Exhibition of Meteorological Apparatus, Photographs, &c., at the Institute of Technology, Boston, in connection with its fourteenth regular meeting in January 1889. The Society has issued a request for contributions.

THE Report of the Norwegian party of the International Polar Investigation contains the results of the observations which were made according to the programme decided upon at the Polar Conference at St. Petersburg, in August 1881. The observations were made at Bossekop in Alten, in lat. 69° 58′ N. and long. 23° 15′ E. of Greenwich. The first volume, issued in 1887, contains the astronomical and meteorological observations, and the second volume (Christiania, 1888) gives the results of the magnetic determinations and observations of auroræ. In the meteorological section, tables are given of the hourly readings of the temperature and humidity of the air, height of barometer, direction of winds and nature of clouds, extending from August 1882 to August 1883 inclusive, and concluding with monthly averages. In vol. ii. are given the records of the determinations of the magnetic declination and horizontal and vertical intensity. These were made fortnightly during the year, at intervals of five minutes during the day, so that the carefully-executed curves expressing the results of the observations are very detailed and convenient for comparison with the complete descriptions of auroral displays, the records of which are also contained in this volume. No doubt these results will be of great service in correlating auroræ with magnetic disturbances.

THE Royal Meteorological Society has published its "Meteorological Record" for the first quarter of this year, containing the monthly results of observations made at its stations, with remarks on the weather by Mr. W. Marriott. The Society commenced the organization of stations on a uniform plan in 1874, and these were supplemented by another class of stations, termed climatological, in 1880. Since 1881 the results have been published in a separate form under the above title. A map of the stations is issued annually, and shows that they are fairly well distributed, except in Wales. In addition to the monthly results, tables of daily rainfall are given for a number of stations, and of the daily temperature and sunshine in London and the suburbs. The monthly values published by the Registrar-General are also appended, and the whole forms a valuable record of the meteorological statistics of England and Wales, issued well up to date.

AT the meeting of the French Meteorological Society on November 6, M. Lemoine presented a summary of the rainfall observations of the basin of the Seine in 1887. He stated that the rainfall was everywhere below the average; in the Department of the Seine-Inférieure the totals for the year were the lowest in a series of twenty-one years. M. Renou stated that the late M. Hervé-Mangon having expressed the wish that his observations made at Ste.-Marie-du-Mont should be published, Mme. Mangon had handed them over to him for publication at her expense. M. Renou presented a note on the temperature of October at Paris since 1757. He pointed out that during the last 130 years the month of October presented either a low or a high mean every twenty or twenty-five years. Means as low as that for October 1887, viz. 44°·1, were very rare. Since 1757 the lowest averages for October had occurred in 1784 (45°·3), and 1817 (45°·1).

BIOLOGISTS will be glad to learn that the posthumous works of the late M. Severtsoff are being issued by M. Menzbier, at Moscow, and that a new part has been added this year to the part which appeared in 1886. Severtsoff not only was a first-rate zoologist and explorer of unbeaten tracts in Turkestan; he was also a powerful thinker, and everything he wrote about the philosophy of zoology deserves attention. Unhappily, his frequent expeditions to Central Asia rendered it impossible for him to bring to an end the works of a general character which he was preparing. He had begun an "Ornithology of Turkestan," based upon his exceedingly rich collection of birds, which contains no less than from 12,000 to 13,000 specimens. This work will be completed by M. Menzbier, and it could not have been put into better hands. As for the two parts of his "Posthumous Works" (*Mémoires de la Soc. des Natur. de Moscou*, vol. xv. fascs. 3 and 5), they consist of two papers: one in German, on two insufficiently known species of Russian hunting hawks (*Hierofalco grebnitzky*, n. sp., and *Hierofalco uralensis*, Sev. et Menzbier); and the other, in French, on variations due to age of the Palæarctic *Aquilinæ*, and the taxonomic importance of those variations. The former contains, besides the description of the two species (with coloured plates), a sketch of the geographical distribution of the Icelandian, Norwegian, Uralian, and Labradorian species of *Hierofalco*. The second paper contains, first, a discussion of some principles of zoological classification, being an answer to Dr. Seebohm's reproach of having "too closely followed the steps of the elder Brehm," and of having aimed at "hitting the happy medium between 'lumpers' and 'splitters.'" This is followed by a discussion of the natural extent of the family of *Aquilinæ* (which, according to Severtsoff, must include only the three genera, *Aquila*, *Haliaëtos*, and *Milvus*); the geographical distribution of all known species of the *Aquilinæ*; and finally, the description of those species which Severtsoff had himself studied closely in the field,—special attention being given to the variations of coloration dependent upon the age of the individuals Seven beautifully coloured plates accompany the work.

WE have received the twelfth volume of the systematic Catalogue of the Museum of Natural History of the Netherlands. The present volume deals with Mammifers, and has been compiled by F. A. Jentink. No fewer than 5379 individuals, representing 900 species of Mammifers, are enumerated in this Catalogue. M. Jentink hopes that his work may be of service to zoologists by enabling them to see what rare or interesting species are to be found in the National Museum, the value of which, in this particular branch, has not hitherto, apparently, been sufficiently appreciated.

A PAPER on "Energy and Vision," by Prof. S. P. Langley, was read by abstract before the American National Academy of Sciences on April 19 last. This paper was printed in the November number of the *American Journal of Science*, and has now been separately issued. The writer does not profess any competence in physiological optics, and points out that his observations, and the conclusions reached from them, are both to be understood from the purely physical point of view. This being premised, he summarizes the paper in the following conclusions:—"The time required for the distinct perception of an excessively faint light is about one half-second. A relatively very long time is, however, needed for the recovery of sensitiveness after exposure to a bright light, and the time demanded for this restoration of complete visual power appears to be the greatest when the light to be perceived is of a violet colour. *The visual effect produced by any given, constant amount of energy varies enormously according to the colour of the light in question.* It varies considerably between eyes which may ordinarily be called normal ones, but an average gives the following proportionate result for seven points in the normal spectrum, whose wave-lengths correspond approximately with those of the ordinary colour divisions, where unity is the amount of energy (about $\frac{1}{1000}$ erg) required to make us see light in the crimson of the spectrum near A, and where the six preceding wave-lengths given correspond approximately to the six colours—violet, blue, green, yellow, orange, red.

Colour.	Violet.	Blue.	Green.	Yellow.	Orange.	Red.	Crims.
	μ	μ	μ	μ	μ	μ	μ
Wave-length	·40	·47	·53	·58	·60	·65	·75
Luminosity (visual effect).	1,600	62,000	100,000	28,000	14,000	1200	1

Since we can recognize colour still deeper than this crimson, it appears that the same amount of energy may produce *at least* 100,000 times the visual effect in one colour of the spectrum that it does in another, and that the *vis viva* of the waves whose length is 0·75μ, arrested by the ordinary retina, represents work done in giving rise to the sensation of crimson light of 0·0000000000003 horse power, or about 0·001 of an erg, while the sensation of green can be produced by 0·00000001 of an erg."

A NEW and highly interesting method of obtaining gaseous carbon oxysulphide, COS, perfectly pure and in large quantities, has been discovered by M. Armand Gautier. The methods of preparing this gas already known are somewhat difficult to carry out, and the only effectual means of purifying it from the persistent presence of carbon disulphide vapour with which we have been hitherto acquainted, is by utilizing the fact that carbon disulphide is absorbed by triethyl phosphine, a most costly reagent. M. Gautier's new method is extremely simple. A large porcelain tube is partially filled with calcined kaolin, the purest variety of natural silicate of alumina, and heated to whiteness in a good furnace. The air having been first expelled by means of a current of carbon dioxide, a gentle stream of dry carbon disulphide vapour is allowed to slowly pass through the tube. The mixture of gases which issues from the tube is found to consist of a little over 60 per cent. of carbon oxysulphide, and about 35 per cent. of carbonic oxide, together with traces of carbon dioxide and sulphuretted hydrogen, and a slight excess of vapour of carbon disulphide. This mixture is now passed (1) through a flask half filled with iced water, in which is deposited the greater portion of the excess of carbon disulphide; (2) through a wash-bottle containing potash solution, which absorbs carbon dioxide and sulphuretted hydrogen; (3) through a solution of cuprous chloride in hydrochloric acid, which removes the carbonic oxide; (4) through an alcoholic 12 per cent. solution of aniline, which takes up the last traces of carbon disulphide, with formation, according to Hofmann, of sulpho-diphenyl-urea, $CS(NH \cdot C_6H_5)_2$; and finally (5) through an ordinary drying tube containing pumice and sulphuric acid. The gas which issues from the apparatus thus arranged is found on analysis, provided the most ordinary precautions are taken not to allow the passage of too rapid a stream, to consist of chemically pure carbon oxysulphide. As regards what happens in the kaolin tube, on allowing it to cool in contact with the mixture of gases and afterwards carefully breaking it, at the end from which the gas issued a quantity of brilliant white needles of silicon sulphide, SiS_2, are found partially obstructing the tube. In place of the kaolin is found a graphitic mass studded with very hard tolerably large crystals of a substance which evolves sulphuretted hydrogen in contact with moist air, and is decomposed by water with precipitation of gelatinous aluminic and silicic hydrates. This most interesting substance is in reality a sulpho-silicate of alumina, or a kaolin in which oxygen has been replaced by sulphur, thus opening up the wide prospect of the formation of a whole series of sulpho-silicates in which the oxygen of natural silicates is replaced by sulphur.

A WORK on the telephone, by Mr. W. H. Preece and Dr. Julius Maier, which has long been in preparation, will be published in the course of a week or two by Messrs. Whittaker and Co., as a volume in their "Specialists' Series." A work on manures will be published shortly in the same series. Its author is Dr. A. B. Griffiths, Principal of the School of Science, Lincoln. Mr. G. R. Bodmer has in the press a practical treatise on hydraulic motors, which will also form a volume of the "Specialists' Series."

THE Carpathian Club in Transylvania, which was founded in 1880, has now about 1600 members. Its object is to investigate the Transylvanian Alps, and to construct good roads and refuges. The Club intends to erect at Hermannstadt a Museum for its library, and for maps, plans, photographic views of the Carpathians, and ethnological and natural history objects.

THE Liverpool Science Students' Association has issued its Report for the session 1887–88. According to the Committee, the condition of the Society, as regards both the number of its members and the character of its work, is eminently satisfactory. The papers read at the evening meetings were, we are told, "of a high character, evidencing much careful observation and patient investigation."

A REPORT from Elba states that the whole of the island is infected by Phylloxera. In Toscana the efforts to check the plague have as yet proved unsuccessful. The insect has also made its appearance at Parmi, in Calabria, at Novara, and at Cervo in Liguria. Reports from the neighbourhood of San Remo and from Lombardy state that the infected areas are constantly increasing.

DURING the last summer, Washington and other eastern cities of the United States were exceptionally free from the attacks of "shade-tree pests." Elm-leaf beetles were not nearly so numerous as usual. In recording this fact in *Insect Life*—a useful publication lately started by the United States Department of Agriculture—the writer refers to "an occurrence which shows how careful one must be in drawing conclusions from experiments to destroy insects." "Counting," he says, "upon the ordinary appearance of the elm-leaf beetle, we sprayed the trees in our garden with London purple early in the summer, and as no damage was done, we were quite of the opinion that the spraying had been a success until, later, we noticed that unsprayed trees were quite free also. In the same way a gentleman came to us toward the end of the season and informed us that he had completely protected his trees, by spraying the grass under them with Paris green, his trees for the first time in several years having retained the verdure of their foliage."

AT a recent meeting of the Linnean Society of New South Wales, Mr. C. W. De Wis read a paper presenting "A Glimpse of the Post-Tertiary Avi-fauna of Queensland." He described such bird-remains as can with confidence be referred to known genera, from the Chinchilla deposits, Darling Downs, Queensland. The fossiliferous beds, which have been exposed by floods in the banks of the Condamine River, have yielded the remains of mollusks, fresh-water fishes, alligators, turtles, and terrestrial vertebrates; whence it may be inferred that the locality was once the site of a densely populated water-course or basin. In keeping with this it might have been anticipated that the birds whose remains have so far come to light would belong for the most part to tribes which haunt the margins or explore the waters of lakes and rivers. And this turns out to be the case, for, with one or two more or less doubtful exceptions, the nine species described are referable to birds of no higher grade than the old order Grallatores, the majority of them belonging chiefly to the Anseres and Rallidæ.

THE last issue of the *Mittheilungen* of the German Asiatic Society of Japan (Heft 39, Band iv.) contains a long account of the remote Chinese province of Kansu, by Herr von Kreitner, who is known to many readers as a member of the Szchenyi Expedition to the borders of Tibet about twelve years ago, and the author of an account of the explorations then made, entitled "Im Fernen Osten." The writer describes the geography of the province in three sections: (1) North-Western Kansu, belonging to the Gobi and Shamo deserts; (2) the central and north-eastern districts, which are drained by the Hoang-ho or Yellow River; and (3) Southern Kansu, belonging to the Yang-tsze drainage area. One feature of the paper is a picturesque account of the loess districts of the province. Prof. Fesca describes briefly two works of his on Japanese agriculture, and the agricultural capacities of the country, which have recently appeared. A third paper, also short, contains the results of an investigation into the chemical changes produced in tea by the process of "firing," a species of roasting which the leaf undergoes after it is picked, and before shipment to Europe.

IN the signature of the letter entitled "The Pasteur Institute," printed in NATURE last week, for Parky*er* read Parky*n*.

THE additions to the Zoological Society's Gardens during the past week include two Philippine Paradoxures (*Paradoxurus philippensis*) from the Philippine Islands, presented by Mr. G. P. Ogg; a Brazilian Tapir (*Tapirus americanus* ♂) from the Province of Parana, South America, presented by Mr. Anthony Taafe; a Long-fronted Gerbille (*Gerbillus longifrons*) from Western Asia, presented by Mr. Lionel Hanbury; a Meyer's Parrot (*Pœocephalus meyeri*) from East Africa, presented by Dr. Hugh Eaton, F.G.S.; two Common Quails (*Coturnix communis*), European, presented by Mr. W. H. St. Quintin, F.Z.S.; a Common Guillemot (*Lomvia troile*), British, presented by Mr. E. Hart, F.Z.S.; a Moorish Gecko (*Tarentola mauritanica*) from the South of France, presented by Mr. J. C. Warbury; an Indian Crocodile (*Crocodilus palustris*), a Hawks-billed Turtle (*Chelone imbricata*) from the Philippine Islands, presented by Captain J. Sommes; a Black Salamander (*Salamandra atra*), European, presented by Mr. G. A. Boulenger, F.Z.S.; a Bald-headed Chimpanzee (*Anthropopithecus calvus* ♀) from the Gaboon, three Dwarf Chameleons (*Chamæleon pumilus*) from South Africa, deposited; a Molucca Deer (*Cervus moluccensis*), born in the Gardens.